



US EPA RECORDS CENTER REGION 5



436316

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## REGION 5

## Superfund Division

Emergency Response Branch

Brownfields / Early Action Section

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To: Mark Jaworski FAX Number \_\_\_\_\_From: jen bel \_\_\_\_\_Date: 2/18/04 Number of Pages \_\_\_\_\_  
(Including Cover Page)Comments: GDC info - in parts!→ - Draft SIP June 1992→ - Draft HRS Score - 1984- ETE FSIP- 1991 (w/ PA Score Sheets)

**DRAFT**

**SITE INSPECTION PRIORITIZATION  
FOR  
GARY DEVELOPMENT, INCORPORATED  
GARY, INDIANA  
IND077005916**

**JUNE 1992**

**This document was prepared in accordance with U.S. EPA Contract No. 68-W8-0089, WESTON Region V Alternative Remedial Contracting Strategy (ARCS).**

**Work Assignment No. 048-5JZZ**

**Document Control No. 4500-48-AFJU**

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## SECTION 1

### INTRODUCTION

This Draft Site Inspection Prioritization (SIP) for the Gary Development Company, Inc. site (IND077005916) has been prepared by Roy F. Weston, Inc. (WESTON®) to fulfill the requirements of United States Environmental Protection Agency (U.S. EPA) region V Work Assignment No. 48-5JZZ.

The objectives of this SIP are to:

- Prepare a HRS Prescore based on the currently available information.
- Identify and summarize any critical data gaps in the available information and propose methods for eliminating these data gaps.
- Summarize the status of the site and make recommendations on the disposition of the site.

Included in this Draft SIP are site Figures (Attachment A), list of industrial wastes (Attachment B), Prescore Summary Sheet (Attachment C), and References (Attachment D).

## SECTION 2

### SITE BACKGROUND

#### 2.1 SITE DESCRIPTION AND HISTORY

The site is an active sanitary/industrial landfill and is located at 479 Cline Avenue in Gary, Indiana. A site diagram showing its location is included in Attachment A. The property is bordered by the Elgin Joliet and Eastern Railroad tracks to the north and east, the Grand Calumet River to the south and a ditch running along its western border. Access to the property is from a frontage road that crosses the Grand Calumet River on the north.

The landfill was constructed in an abandoned, water-filled sand quarry located adjacent to the Grand Calumet River in northeastern Indiana. The current operator of the site, Mr. Lawrence H. Hagen, Vice President of Gary Development Co., Inc. (GDC) obtained a sanitary landfill construction permit before building the landfill. The Indiana State Board of Health required dewatering of the quarry, lining the sidewalls with clay and installation of two clay barrier walls (west and south) a leachate collection system and four perimeter monitoring wells. Construction was completed, a state inspection was passed and the operator began accepting solid waste for disposal in September of 1974. The liquid wastes from the leachate collection system were discharged into the Grand Calumet River for a number of years utilized a National Pollution Discharge Elimination System permit. Since 1983, as a result of a consent decree settlement with the state, the liquid leachate has been mixed with lime and flyash to form a rock-like cover material.

Also, GDC has petitioned for and received approval from the State Board of Health to accept a number of industrial wastes throughout its years of operation (See Table 1, Attachment B).

The site is surrounded by 11 alleged or known hazardous waste sites within a two mile radius. Five of these sites border the perimeter of this landfill. The sites include Vulcan Material Metal Division surface impoundment, City Service refinery tank bottom dump,

Conservation Chemical surface impoundments, Gary Airport Dump, Grand Calumet River, Cliff Rolland Dump, 9th Avenue Dump, Midco II, Midco I, unnamed dump and the City of Gary Landfill.

The site is situated within the Calumet Laustrine plain; it is made up of 40'-175' of glacial laustrine sand and gravel. This sand and gravel overlies a layer of silurian dolomite limestone of the Wabash formation which forms the upper aquifer. The lower aquifer is formed by 300'-685' of ordovician dolomite limestone, sandstone and shale. Because of poor water quality in the lower aquifer, the upper aquifer is used for drinking water. The aquifers are separated by a confining layer. Near the surface is about 50' of Wisconsin glacio-lacustrine sand and gravel which consists of fine to medium silty sand interbedded with beach gravel, silt and clay. The water table is approximately 10'-12' below the surface and groundwater flow is towards the Grand Calumet River which borders the site to the south.

## **2.2 PRIOR INVESTIGATIONS**

A site inspection was conducted by FIT members on 27 and 28 December 1983 and collected samples from two on-site monitoring wells and from the west side drainage ditch. The presence of organic and heavy metal contamination in on-site monitoring wells were not attributed to the site because the groundwater level in the monitoring wells was approximately 20 to 30 feet above the water table elevation of the landfill and could represent contamination from upgradient sources (City Service and conservation chemical disposal sites). The heavy metal contamination detected in the west ditch was attributed to the nearby Vulcan Material's plant surface impoundment.

The October 9, 1991 Preliminary Assessment Report prepared by Ecology and Environment, Inc., Field Investigation Team identified 7 waste types with relative volumes of each waste being characterized as present at the site. The following wastes were identified: sludge (71,000 cubic yards), oily wastes (22,000 cubic yards), solvents (no volume listed), pesticides

(120 cubic yards), other organics (no volume listed), inorganics (1,655 cubic yards) and heavy metals (95,300 cubic yards).

This report also indicated the leachate collection system on site maintains a depressed water table surrounding the landfill. As a result, the probability of contaminants migrating from the site to groundwater is remote. Without the leachate collection system in operation, there is a potential for groundwater to become contaminated because the precipitation in this area is heavy, the subsurface is sandy and the water table is high.

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## SECTION 3

### SITE DISCUSSION AND RECOMMENDATIONS

#### 3.1 DISCUSSION OF PRESCORE MODEL

The nature and extent of landfilling at the site as indicated in the Ecology and Environment Preliminary Assessment Report of 9 October 1991 yields an estimated waste quantity of 190,075 cubic yards. Twelve contaminants were found at Level II concentrations in on-site monitoring wells and west ditch collected on site during 1984. The contaminants and their concentrations are as follows: 1,1 dichloroethane at 15  $\mu\text{g/L}$ , trans-1,2-dichloroethene at 5  $\mu\text{g/L}$ , 2-butanone at 510  $\mu\text{g/L}$ , benzylbutyl phthalate at 10  $\mu\text{g/L}$ , pyrene at 10  $\mu\text{g/L}$ , nickel at 266  $\mu\text{g/L}$ , arsenic at  $\mu\text{g/L}$ . This data was entered into the Prescore model as constituents of the landfill even though it was determined that these level of contaminants may not have resulted from site operation. For scoring purposes, the site was considered lined, covered and containing a leachate collection system.

There are approximately 1,270 persons that use residential wells within a 4-mile radius of the site; approximately 124 of these persons live within a 3-mile radius of the site. There are no drinking water wells within a 2-mile radius of the site. The nearest surface water intakes downstream residents; 11 miles for East Chicago, Indiana serving 39,786 residents and 11 miles for Hammond, Indiana serving 294,549 residents. Therefore, these secondary targets yield a score of 22.10 for the groundwater pathway on the Prescore program.

Organic contaminants were found in the ditch that flows along the west side of the site and into the Grand Calumet River, based on the data of the samples collected by Ecology and Environment, Inc. on December 27, 1983. The Grand Calumet River flows into the Indiana Harbor Canal approximately 2.5 miles downstream from the point of entry of the ditch on site. Depending on the level of water in Lake Michigan, the canal flows out to Lake Michigan through the Indiana Harbor or towards the Grand Calumet River. However, heavy metals contamination of the ditch as indicated by the sample results was attributed to the Vulcan Material Plant's surface impoundment that lies less than 50' west of the ditch.



The specific sources contributing to the groundwater contamination is complex because there are 11 alleged or known hazardous waste sites within a 2 mile radius of the site.

The other pathways of interest to the Prescore program did not score substantially. Surface waste contamination was not considered to be a major threat to human targets due to the distance of drinking water intakes from the landfill. Consequently, the surface water pathway scored 0.55.

The soil pathway yielded a score of 1.12 largely due to the number of workers on site (less than 50) and the remote location (nearest residence is approximately .5 miles from site). Also, contamination from the soil is contained since the operator is applying a cover consisting of a mixture of liquid leachate, lime and flyash.

The air pathway scored 0.55 on the Prescore as a result of the location of the site relative to nearby residences and the number of workers on site.

### 3.2 RECOMMENDATIONS

Attachment D contains a summary sheet for the Prescore model and a copy of the model for the site on disk. The site scored a total of 11.07. There are several reasons for the low score, the primary one being the lack of nearby human targets for the drinking water and surface water pathway. A relatively low number of residents use residential wells within the 4 mile pathway and surface water intake locations are such that the chances of this site having any impact on them are low.

The overall score was low even when monitoring well contamination unrelated to the site operations were used in the Prescore model. The estimated overall site score was considerably lower than the minimum score of 28.50 needed for NPL listing. The site is being impacted by a number of hazardous waste sites surrounding the site. As a result of this, any additional investigation at this site is not warranted. Therefore, WESTON

recommends that this site be considered as requiring no further action based upon the low overall site score and other complicating factors because of the site's location in the midst of several hazardous waste sites.

**PREscore  
Summary Screen**

**Site: Gary Development  
IND077005916**

**File: GARYDEV.HRS**

**Site Score 11.07**

<b>PREscore Version 1.0</b>				
<b>Pathway</b>	<b>Likelihood of Release</b>	<b>Waste Characteristics</b>	<b>Targets</b>	<b>Pathway Score</b>
<b>Groundwater</b>	<b>410</b>	<b>18</b>	<b>2.47 E+02</b>	<b>22.10</b>
<b>Drinking Water</b>	<b>500</b>	<b>18</b>	<b>5.00 E+00</b>	<b>0.55</b>
<b>Food Chain</b>	<b>500</b>	<b>180</b>	<b>0.00 E+00</b>	<b>0.00</b>
<b>Environmental</b>	<b>500</b>	<b>180</b>	<b>0.00 E+00</b>	<b>0.00</b>
<b>Surface Water</b>		<b>Overland Flow</b>		<b>0.55</b>
<b>Resident</b>	<b>550</b>	<b>32</b>	<b>5.00 E+00</b>	<b>1.07</b>
<b>Nearby</b>	<b>125</b>	<b>32</b>	<b>1.18 E+00</b>	<b>0.06</b>
<b>Soil Exposure</b>				<b>1.12</b>
<b>Air</b>	<b>500</b>	<b>3</b>	<b>3.00 E+01</b>	<b>0.55</b>

## TABLE 1

44. GDL received permission to accept the following listed wastes:

<u>Waste Type</u>	<u>Permission Letter Date</u>	<u>Amount Allowed</u>
API Separator Bottoms	6/3/77	200 cubic yards
Paint Sludges	4/12/76	25 cubic yards
Solid Corn Starch	2/20/76	Unspecified
Carbon Filters from Corn Syrup Filtering Processes	2/20/76	Unspecified
Lime Sludges	6/1/77	80,000 gallons per month or 4,000 gallons per day
Lime Waste	3/14/77	80,000 gallons per month
Calcium Carbonate	10/4/76	30 cubic yards per day
Lime Sludge	1/30/76	1,500 to 5,000 gallons per week
Activated Biological Sludge	4/25/77	Unspecified
Calcium Sulfate	3/14/77	1.5 tons per day
Gypsum Wastes (no Cd or Pb)	10/7/76	Unspecified

<u>Date</u>	<u>Waste Type</u>	<u>Waste Quantity</u>
1/30/76	Lime Slurry	1,500 to 5,000 gallons per week
6/18/75	Neutralized Sludges	Temporary Approval
2/24/75	Dripolene	4 to 5 truckloads per week for 6 months

1/14/81

Fly Ash

60,000 cubic yards for  
calendar year 1981

<u>Date</u>	<u>Waste Type</u>	<u>Waste Quantity</u>
1/9/81	Asbestos	50 cubic yards (one-time-only basis)
12/17/80	Pipe Insulating Asbestos Waste	300 cubic yards (one-time-only basis)
12/9/80	Metal Shavings	25 cubic yards per year
10/30/80	Asbestos Contaminated Material	700 cubic yards (one-time-only basis)
8/25/80	Asbestos	100 cubic yards (one-time-only basis)
5/14/80	Asbestos	40 cubic yards per week for four weeks; 20 cubic yards every other week thereafter
5/13/80	Fly Ash	15,000 cubic yards
11/27/79	Aluminum Dross (Milling Dust and Slag)	300 tons per day until June 15, 1980
3/20/79	Furnace Brick, Pallets	Unspecified
4/28/78	Water and Vegetable Oil	4,000 gallons (one-time-only basis)
11/18/77	Herbicide	120 cubic yards (one-time-only basis)
9/6/77	Oily Waste From 6-Stand Oil Recovery Unit	1,200 gallons per day
7/22/77	Filter Cake Kiln Scrubber Mud	1,500 pounds per week 3,000 pounds per week
6/3/77	API Separator Bottoms	200 cubic yards per year
6/1/77	Lime Sludge	80,000 gallons per month (not more than 4,000 gallons per day)
5/17/77	Asbestos Paper	105 cubic yards per week
5/12/77	Filter Cake Scrubber Mud	1,500 pounds per week 3,000 pounds per week (Temporary Approval)
4/25/77	Activated Biological Sludge	Unspecified
3/14/77	Calcium Sulfate	1.5 tons per day
3/14/77	Lime Waste	80,000 gallons per month
3/4/77	Youngstown Oil Sludge	Unspecified
10/7/76	Gypsum Wastes (ph 7.9)	Quantity Unspecified
10/4/76	Calcium Carbonate	30 cubic yards per day
4/12/76	Paint Sludges	25 cubic yards per day
2/20/76	Corn Starch and Carbon Filters	Unspecified

RS-8307-04

Facility name: GARY DEVELOPMENT LANDFILL

Location: GARY / LAKE COUNTY / INDIANA

EPA Region: REGION II (CHICAGO)

Person(s) in charge of the facility: STEVE GENTRY - ISBH

Name of Reviewer: PAUL HESS Date: 4-10-84

General description of the facility:  
 (For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

This sanitary landfill has accepted a large quantity of industrial waste. However, the surface water route is the only route to score. This is because this borrow pit is clay lined and has a leachate collection system. The water table has been depressed 30 feet and site waste is not a threat to area wells.

Scores:  $S_M = 8.41$  ( $S_{GW} = 0$   $S_{SW} = 14.55$   $S_a = 0$ )  
 $S_{FE} = 0$   
 $S_{DC} = 16.67$

FIGURE 1  
HRS COVER SHEET

Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi- plier	Score	Max. Score	Ref. (Section)
<b>1</b> Observed Release	0	<b>45</b>	1	<b>45</b>	45	4.1
If observed release is given a value of 45, proceed to line <b>4</b> . If observed release is given a value of 0, proceed to line <b>2</b> .						
<b>2</b> Route Characteristics						4.2
Facility Slope and Intervening Terrain	0	1	2	3	1	3
1-yr. 24-hr. Rainfall	0	1	2	3	1	3
Distance to Nearest Surface Water	0	1	2	3	2	6
Physical State	0	1	2	3	1	3
Total Route Characteristics Score						15
<b>3</b> Containment	0	1	2	3	1	3
<b>4</b> Waste Characteristics						4.4
Toxicity/Persistence	0	3	6	9	12	15
Hazardous Waste Quantity	0	1	2	3	4	5
					6	7
					8	
Total Waste Characteristics Score					<b>26</b>	26
<b>5</b> Targets						4.5
Surface Water Use	0	1	<b>2</b>	3	3	9
Distance to a Sensitive Environment	0	<b>1</b>	2	3	2	6
Population Served/Distance to Water Intake Downstream	<b>0</b>	4	6	8	10	40
	12	16	18	20		
	24	30	32	35	40	
Total Targets Score					<b>8</b>	55
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b>				<b>45 x 26 x 8 = 9,360</b>		
If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>						64,350
<b>7</b> Divide line <b>6</b> by 64,350 and multiply by 100				<b>S<sub>SW</sub> = 14.55</b>		

**FIGURE 7**  
**SURFACE WATER ROUTE WORK SHEET**

	S	S <sup>2</sup>
Groundwater Route Score (S <sub>gw</sub> )	0	0
Surface Water Route Score (S <sub>sw</sub> )	14.55	211.70
Air Route Score (S <sub>a</sub> )	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		211.70
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		14.55
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		8.41

FIGURE 10  
WORKSHEET FOR COMPUTING S<sub>M</sub>



Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
<b>1</b> Observed Incident	0 45	1	0	45	8.1	
If line <b>1</b> is 45, proceed to line <b>4</b> If line <b>1</b> is 0, proceed to line <b>2</b>						
<b>2</b> Accessibility	0 1 2 3	1	1	3	8.2	
<b>3</b> Containment	0 15	1	15	15	8.3	
<b>4</b> Waste Characteristics Toxicity	0 1 2 3	5	15	15	8.4	
<b>5</b> Targets					8.5	
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	16	20		
Distance to a Critical Habitat	0 1 2 3	4	0	12		
Total Targets Score			16	32		
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b> $15 \times 15 \times 16 =$			3,600			
If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>				21,600		
<b>7</b> Divide line <b>6</b> by 21,600 and multiply by 100			SDC = 16.67			

FIGURE 12  
DIRECT CONTACT WORK SHEET

## GROUND WATER ROUTE

## 1 OBSERVED RELEASE

Contaminants detected (5 maximum): SITE MONITORING WELLS THAT LIE OUTSIDE CLAY LINER OF LANDFILL DID SHOW THE PRESENCE OF PRIORITY POLLUTANTS. BUT, THEY ARE NOT ATTRIBUTED TO THIS SITE BECAUSE SURROUNDING GROUND WATER IS FLOWING TO DEPRESSED WATER TABLE OF SITE.

Rationale for attributing the contaminants to the facility: THIS OLD BORROW PIT WAS DEWATERED AND SIDEWALLS LINED WITH CLAY. THE BOTTOM OF PIT HAS 65 FEET OF NATURAL CLAY AND A LEACHATE COLLECTION SYSTEM. THE ON-SITE WATER TABLE HAS BEEN DEPRESSED 30 FEET.

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## 2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern: THE SHALLOW GLACIAL SEDIMENT AQUIFER WITH A DEPTH OF 30 TO 40 FEET. THE SULARIAN AQUIFER (NOT AQUIFER OF CONCERN) LIES UNDER 60 TO 70 FEET OF NATURAL CLAY.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern: THE DEPTH TO GROUND WATER SURROUNDING THIS SITE IS ABOUT 5 FEET AND ABOUT LEVEL WITH ELEVATION OF THE GRAND CALUMET RIVER. THE WATER TABLE ON-SITE IS SOME 30 FEET BELOW THIS LEVEL.

Depth from the ground surface to the lowest point of waste disposal/storage:

THE ON-SITE WATER TABLE AND THE LOWEST POINT OF WASTE DISPOSAL ARE AT SAME ELEVATION. THEREFORE, DEPTH OF WASTE IS 30 FEET.

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

32 INCHES (MATP) PER HRS MANUAL

Mean annual lake or seasonal evaporation (list months for seasonal):

28 INCHES (MALE) PER HRS MANUAL

Net precipitation (subtract the above figures): 4 INCHES

Permeability of Unsaturated Zone

Soil type in unsaturated zone: FILLED WASTE AND COVER MATERIAL,  
(COVER MATERIAL IS IN TWO FORMS; ONE IS CLAY, THE OTHER  
IS FLY ASH MIXED WITH LIME AND LIQUID LEACHATE).

Permeability associated with soil type:  $10^{-5}$  cm/sec AS PER ISBH  
PERSONNEL.

Physical State

Physical state of substances at time of disposal (or at present time for  
generated gases): SLUDGE AS PER ISBH RECORD OF  
ON-SITE INDUSTRIAL WASTE DISPOSAL.

\*\*\*

### 3 CONTAINMENT

#### Containment

Method(s) of waste or leachate containment evaluated: *SANITARY  
LANDFILL ( ONLY CONTAINMENT AT THIS SITE ).*

Method with highest score: *LANDFILL HAS A NATURAL CLAY  
BOTTOM OF ABOUT 65 FEET OF CLAY AND OPERATOR  
HAS INSTALLED A LEACHATE COLLECTION SYSTEM,  
SIDE WALLS HAVE BEEN LINED WITH CLAY, AND  
THE SOUTH AND EAST WALLS BARRIER Dikes.*

### 4 WASTE CHARACTERISTICS

#### Toxicity and Persistence

Compound(s) evaluated: *LEAD  
ARSENIC  
D - BHC ( ISOMER OF LINDANE )  
ASBESTOS FIBERS  
COPPER*

Compound with highest score: *LEAD*  
*TOXICITY = 3*  
*PERSISTENCE = 3*

#### Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum): *120,075 CUBIC YARDS*

Basis of estimating and/or computing waste quantity: *ISBN HAS  
RECORDS OF INDUSTRIAL WASTE DISPOSED AT THIS SITE.  
THE ABOVE FIGURE REPRESENTS QUANTITY THAT IS  
CONSIDERED TO BE HAZARDOUS INDUSTRIAL WASTE.*

\*\*\*

## 5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

DRINKING WATER FOR SINGLE FAMILY RESIDENTS.

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply: *THERE ARE A FEW HOMES AT 2ND AVE. AND HOBART ST. THAT HAVE SHALLOW WELLS AS PER E+E, INC SURVEY OF GARY FOR PEOPLE DRINKING GROUND WATER, MARCH, 1984.*

Distance to above well or building: *THE DISTANCE TO THESE WELLS IS GREATER THAN 1/2 - MILE AND LESS THAN 1-MILES AS PER HIGHLAND QUADRANGLE MAP, (USGS).*

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

*448 PEOPLE (CITY OF GARY)*

*703 PEOPLE (BLACK OAK AREA)*

*380 PEOPLE (TRI-STATE AND CLINE AVE AREA)*

*SOURCE OF INFORMATION - HRS WORK SHEET FOR MIDGOTT AND LAKE SAND*

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre): *NONE - THERE IS NO FARM LAND WITHIN 3-MILES OF SITE AS PER HIGHLAND TOPO.*

Total population served by ground water within a 3-mile radius: *1,531 PEOPLE*

## SURFACE WATER ROUTE

## 1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum): 2 - BHC (ISOMER LINDANE)

DI-N-BUTYL PHTHALATE

LEAD

ARSENIC

NICKEL

Rationale for attributing the contaminants to the facility: THE WATER SAMPLE (#E-7168 - ME-1662) TAKEN 1/24/84 FROM DRAINAGE DITCH BETWEEN LANDFILL AND VULCAN MATERIAL, METAL DIV. PLANT. SHOWED BOTH HEAVY METALS AND ORGANIC COMPOUNDS. THE ORGANIC PRIORITY POLLUTANTS ARE ATTRIBUTED TO SITE. HEAVY METALS ARE ATTRIBUTED TO VULCAN'S SURFACE PONDS. OPERATOR DID DISCHARGE LEACHATE TO GRAND CALUMET RIVER FOR A PERIOD OF TIME WITHOUT AID OF A NPDES PERMIT.

## 2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent: NA

Name/description of nearest downslope surface water: NA

Average slope of terrain between facility and above-cited surface water body in percent: NA

Is the facility located either totally or partially in surface water? NA

#### 4 WASTE CHARACTERISTICS

##### Toxicity and Persistence

Compound(s) evaluated *LEAD*  
*ARSENIC*  
*ASBESTOS FINES*  
*NICKEL*  
*α-BHC (ISOMER OF LINDANE)*

Compound with highest score: *LEAD*

##### Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum): *190,075 CUBIC YARDS AS PER ISBH SITE RECORDS.*

Basis of estimating and/or computing waste quantity: *ISBH HAS MAINTAINED RECORDS OF INDUSTRIAL WASTE DISPOSED AT SITE ALONG WITH NAMES OF GENERATORS.*

\* \* \*

#### 5 TARGETS

##### Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance: *RECREATION AND INDUSTRIAL USE.*

Is there tidal influence? *NO - NOT FOR INDIANA*

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less: *NONE*

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less: *SLIGHTLY GREATER THAN 1/2-MILE FOR 50-ACER WETLAND WEST OF LANDFILL AND NORTH OF GRAND CALUMET RIVER, AS PER HIGHLAND TOPO MAP, (1968).*

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less: *NONE FOR NORTHERN INDIANA AS PER ISGW PERSONNEL.*

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake: *NONE WITHIN 3-MILES AS PER CITY WATER DEPT. PERSONNEL.*



Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre): *THERE ARE NO FARMS WITHIN 3-MILE RADIUS OF SITE.*

Total population served: *ZERO*

Name/description of nearest of above water bodies: *NA*

Distance to above-cited intakes, measured in stream miles. *LAKE MICHIGAN WATER INTAKES FOR CITIES IN NORTHERN INDIANA ARE GREATER THAN 6-MILE FROM SITE.*

## DIRECT CONTACT

## 1 OBSERVED INCIDENT

Date, location, and pertinent details of incident: *NONE AS PER  
ISBH PERSONNEL AND SITE FILE.*

\*\*\*

## 2 ACCESSIBILITY

Describe type of barrier(s): *THERE ARE NATURAL AND MAN-  
MADE BARRIERS ON THREE (3) SIDES OF SITE, THE  
ONLY SIDE OPEN TO TRESPASSERS IS ON THE WEST.  
HOWEVER, WORKMEN ARE PRESENT 24 HOURS A DAY.*

## 3 CONTAINMENT

Type of containment, if applicable: *WASTE IS COVERED DAILY  
WITH AT LEAST ONE (1) FOOT OF COVER MATERIAL AS  
PER ISBH SITE INSPECTORS.*

\*\*\*

## 4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated: *LEAD  
ARSENIC  
NICKEL  
PYRENE  
ASBESTOS FIBERS*

Compound with highest score:

*LEAD*

\*\*\*

## 5 TARGETS

Population within one-mile radius

8,000 PEOPLE AS PER HIGHLAND TOWN HOUSE COUNT.

Distance to critical habitat (of endangered species)

NONE AS PER ISBH



ROY F. WESTON, INC.  
THREE HAWTHORN PARKWAY, SUITE 400  
VERNON HILLS, ILLINOIS 60061  
708-918-4000

25 June 1992

JUL 8 2 03 PM '92

OFFICE OF SOLID  
AND HAZARDOUS  
WASTE MGMT  
DEM

RECEIVED  
JUL 2 1992

SITE ASSESSMENT

Ms. Colleen Hart, HSM-5J  
Work Assignment Manager  
U.S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, Illinois 60604

U.S. EPA Contract No.: 68-W8-0089

Work Assignment No.: 48-5JZZ

Document Control No.: 4500-48-AFJU

Subject: SIP of the Gary Development Company, Incorporated Site  
(IND077005916)


Dear Ms. Hart:

Roy F. Weston, Inc. (WESTON®) has completed its file review and preliminary HRS scoring for the Gary Development Corporation. The enclosed SIP report summarizes WESTON's findings and recommends the site be designated as requiring no further action based on the HRS score.

If you have any questions or require additional clarification, please call.

Very truly yours,

ROY F. WESTON, INC.

  
P. Krishnan, Ph.D., P.E.  
Site Manager

PK/sk

cc: Mr. S. Nathan, Project Officer, U.S. EPA, HSM-5J (Letter Only)

\\WO\ARCS\7324.LTR

4500-48-AFJU

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**DRAFT**

**SITE INSPECTION PRIORITIZATION  
FOR  
GARY DEVELOPMENT, INCORPORATED  
GARY, INDIANA  
IND077005916**

**JUNE 1992**

**This document was prepared in accordance with U.S. EPA Contract No. 68-W8-0089,  
WESTON Region V Alternative Remedial Contracting Strategy (ARCS).**

**Work Assignment No. 048-5JZZ**

**Document Control No. 4500-48-AFJU**

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## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1 INTRODUCTION	1-1
2 SITE BACKGROUND	2-1
2.1 Site Description	2-1
2.2 Prior Investigations	2-2
3 SITE DISCUSSION AND RECOMMENDATIONS	3-1
3.1 Discussion of Prescore Model	3-1
3.2 Recommendations	3-3

## LIST OF ATTACHMENTS

### Attachments

- A Site Figures
- B List of Industrial Wastes
- C Prescore Summary Sheet
- D References

## SECTION 1

### INTRODUCTION

This Draft Site Inspection Prioritization (SIP) for the Gary Development Company, Inc. site (IND077005916) has been prepared by Roy F. Weston, Inc. (WESTON®) to fulfill the requirements of United States Environmental Protection Agency (U.S. EPA) region V Work Assignment No. 48-5JZZ.

The objectives of this SIP are to:

- Prepare a HRS Prescore based on the currently available information.
- Identify and summarize any critical data gaps in the available information and propose methods for eliminating these data gaps.
- Summarize the status of the site and make recommendations on the disposition of the site.

Included in this Draft SIP are site Figures (Attachment A), list of industrial wastes (Attachment B), Prescore Summary Sheet (Attachment C), and References (Attachment D).



## SECTION 2

### SITE BACKGROUND

#### 2.1 SITE DESCRIPTION AND HISTORY

The site is an active sanitary/industrial landfill and is located at 479 Cline Avenue in Gary, Indiana. A site diagram showing its location is included in Attachment A. The property is bordered by the Elgin Joliet and Eastern Railroad tracks to the north and east, the Grand Calumet River to the south and a ditch running along its western border. Access to the property is from a frontage road that crosses the Grand Calumet River on the north.

The landfill was constructed in an abandoned, water-filled sand quarry located adjacent to the Grand Calumet River in northeastern Indiana. The current operator of the site, Mr. Lawrence H. Hagen, Vice President of Gary Development Co., Inc. (GDC) obtained a sanitary landfill construction permit before building the landfill. The Indiana State Board of Health required dewatering of the quarry, lining the sidewalls with clay and installation of two clay barrier walls (west and south) a leachate collection system and four perimeter monitoring wells. Construction was completed, a state inspection was passed and the operator began accepting solid waste for disposal in September of 1974. The liquid wastes from the leachate collection system were discharged into the Grand Calumet River for a number of years utilized a National Pollution Discharge Elimination System permit. Since 1983, as a result of a consent decree settlement with the state, the liquid leachate has been mixed with lime and flyash to form a rock-like cover material.

Also, GDC has petitioned for and received approval from the State Board of Health to accept a number of industrial wastes throughout its years of operation (See Table 1, Attachment B).

The site is surrounded by 11 alleged or known hazardous waste sites within a two mile radius. Five of these sites border the perimeter of this landfill. The sites include Vulcan Material Metal Division surface impoundment, City Service refinery tank bottom dump,

Conservation Chemical surface impoundments, Gary Airport Dump, Grand Calumet River, Cliff Rolland Dump, 9th Avenue Dump, Midco II, Midco I, unnamed dump and the City of Gary Landfill.

The site is situated within the Calumet Laustrine plain; it is made up of 40'-175' of glacial laustrine sand and gravel. This sand and gravel overlies a layer of silurian dolomite limestone of the Wabash formation which forms the upper aquifer. The lower aquifer is formed by 300'-685' of ordovician dolomite limestone, sandstone and shale. Because of poor water quality in the lower aquifer, the upper aquifer is used for drinking water. The aquifers are separated by a confining layer. Near the surface is about 50' of Wisconsin glacio-lacustrine sand and gravel which consists of fine to medium silty sand interbedded with beach gravel, silt and clay. The water table is approximately 10'-12' below the surface and groundwater flow is towards the Grand Calumet River which borders the site to the south.

## 2.2 PRIOR INVESTIGATIONS

A site inspection was conducted by FIT members on 27 and 28 December 1983 and collected samples from two on-site monitoring wells and from the west side drainage ditch. The presence of organic and heavy metal contamination in on-site monitoring wells were not attributed to the site because the groundwater level in the monitoring wells was approximately 20 to 30 feet above the water table elevation of the landfill and could represent contamination from upgradient sources (City Service and conservation chemical disposal sites). The heavy metal contamination detected in the west ditch was attributed to the nearby Vulcan Material's plant surface impoundment.

The October 9, 1991 Preliminary Assessment Report prepared by Ecology and Environment, Inc., Field Investigation Team identified 7 waste types with relative volumes of each waste being characterized as present at the site. The following wastes were identified: sludge (71,000 cubic yards), oily wastes (22,000 cubic yards), solvents (no volume listed), pesticides

(120 cubic yards), other organics (no volume listed), inorganics (1,655 cubic yards) and heavy metals (95,300 cubic yards).

This report also indicated the leachate collection system on site maintains a depressed water table surrounding the landfill. As a result, the probability of contaminants migrating from the site to groundwater is remote. Without the leachate collection system in operation, there is a potential for groundwater to become contaminated because the precipitation in this area is heavy, the subsurface is sandy and the water table is high.

## SECTION 3

### SITE DISCUSSION AND RECOMMENDATIONS

#### 3.1 DISCUSSION OF PRESCORE MODEL

The nature and extent of landfilling at the site as indicated in the Ecology and Environment Preliminary Assessment Report of 9 October 1991 yields an estimated waste quantity of 190,075 cubic yards. Twelve contaminants were found at Level II concentrations in on-site monitoring wells and west ditch collected on site during 1984. The contaminants and their concentrations are as follows: 1,1 dichloroethane at 15  $\mu$ /L, trans-1,2-dichloroethene at 5  $\mu$ g/L, 2-butanone at 510  $\mu$ g/L, benzylbutyl phthalate at 10  $\mu$ g/L, pyrene at 10  $\mu$ g/L, nickel at 266  $\mu$ g/L, arsenic at  $\mu$ g/L. This data was entered into the Prescore model as constituents of the landfill even though it was determined that these level of contaminants may not have resulted from site operation. For scoring purposes, the site was considered lined, covered and containing a leachate collection system.

There are approximately 1,270 persons that use residential wells within a 4-mile radius of the site; approximately 124 of these persons live within a 3-mile radius of the site. There are no drinking water wells within a 2-mile radius of the site. The nearest surface water intakes downstream residents; 11 miles for East Chicago, Indiana serving 39,786 residents and 11 miles for Hammond, Indiana serving 294,549 residents. Therefore, these secondary targets yield a score of 22.10 for the groundwater pathway on the Prescore program.

Organic contaminants were found in the ditch that flows along the west side of the site and into the Grand Calumet River, based on the data of the samples collected by Ecology and Environment, Inc. on December 27, 1983. The Grand Calumet River flows into the Indiana Harbor Canal approximately 2.5 miles downstream from the point of entry of the ditch on site. Depending on the level of water in Lake Michigan, the canal flows out to Lake Michigan through the Indiana Harbor or towards the Grand Calumet River. However, heavy metals contamination of the ditch as indicated by the sample results was attributed to the Vulcan Material Plant's surface impoundment that lies less than 50' west of the ditch.

The specific sources contributing to the groundwater contamination is complex because there are 11 alleged or known hazardous waste sites within a 2 mile radius of the site.

The other pathways of interest to the Prescore program did not score substantially. Surface waste contamination was not considered to be a major threat to human targets due to the distance of drinking water intakes from the landfill. Consequently, the surface water pathway scored 0.55.

The soil pathway yielded a score of 1.12 largely due to the number of workers on site (less than 50) and the remote location (nearest residence is approximately .5 miles from site). Also, contamination from the soil is contained since the operator is applying a cover consisting of a mixture of liquid leachate, lime and flyash.

The air pathway scored 0.55 on the Prescore as a result of the location of the site relative to nearby residences and the number of workers on site.

### **3.2 RECOMMENDATIONS**

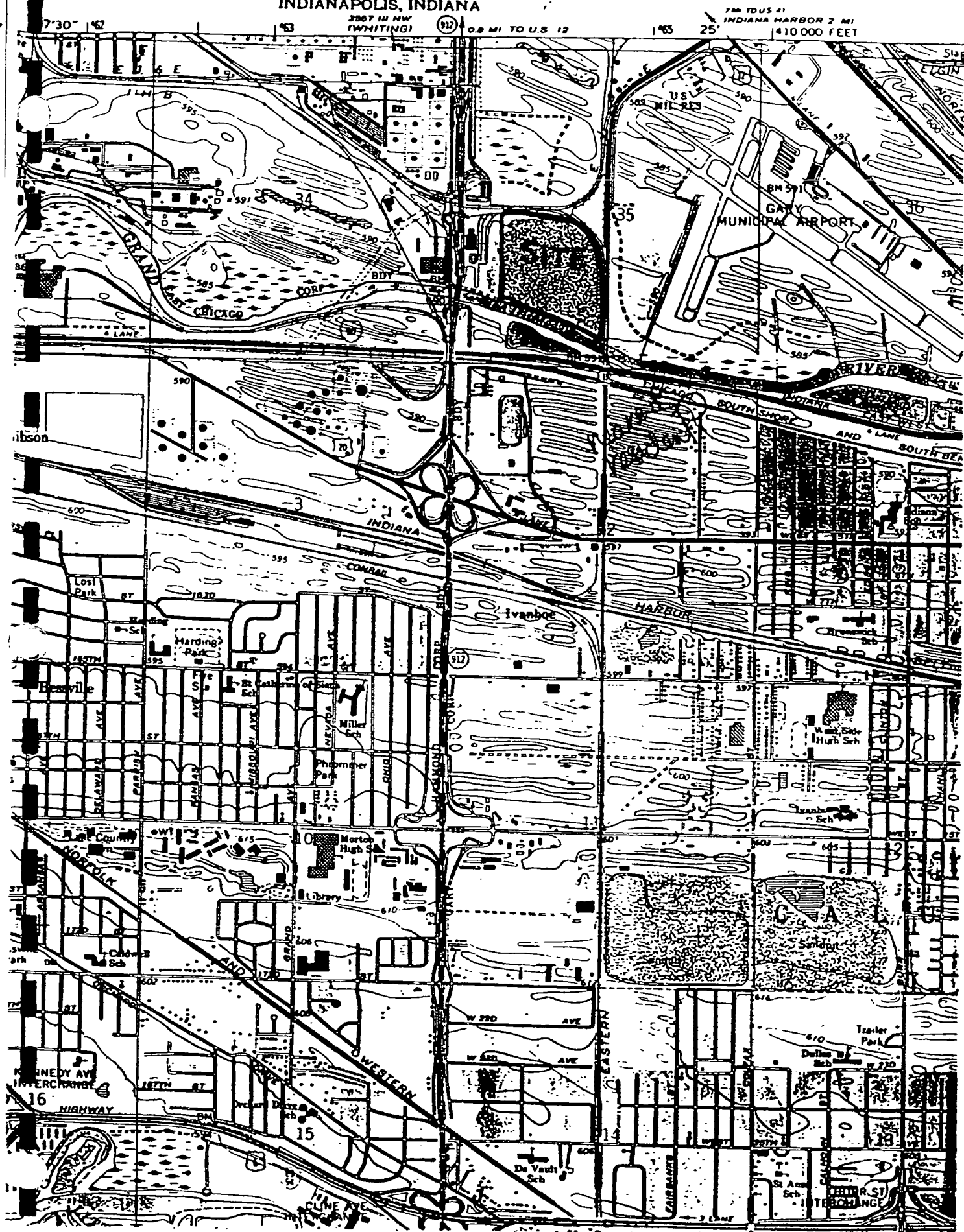
Attachment D contains a summary sheet for the Prescore model and a copy of the model for the site on disk. The site scored a total of 11.07. There are several reasons for the low score, the primary one being the lack of nearby human targets for the drinking water and surface water pathway. A relatively low number of residents use residential wells within the 4 mile pathway and surface water intake locations are such that the chances of this site having any impact on them are low.

The overall score was low even when monitoring well contamination unrelated to the site operations were used in the Prescore model. The estimated overall site score was considerably lower than the minimum score of 28.50 needed for NPL listing. The site is being impacted by a number of hazardous waste sites surrounding the site. As a result of this, any additional investigation at this site is not warranted. Therefore, WESTON

recommends that this site be considered as requiring no further action based upon the low overall site score and other complicating factors because of the site's location in the midst of several hazardous waste sites.

ATTACHMENT A  
SITE FIGURES

**INDIANAPOLIS, INDIANA**





ATTACHMENT B  
LIST OF INDUSTRIAL WASTES

# TABLE 1

44. GDL received permission to accept the following listed wastes:

<u>Waste Type</u>	<u>Permission Letter Date</u>	<u>Amount Allowed</u>
API Separator Bottoms	6/3/77	200 cubic yards
Paint Sludges	4/12/76	25 cubic yards
Solid Corn Starch	2/20/76	Unspecified
Carbon Filters from Corn Syrup Filtering Processes	2/20/76	Unspecified
Lime Sludges	6/1/77	80,000 gallons per month or 4,000 gallons per day
Lime Waste	3/14/77	80,000 gallons per month
Calcium Carbonate	10/4/76	30 cubic yards per day
Lime Sludge	1/30/76	1,500 to 5,000 gallons per week
Activated Biological Sludge	4/25/77	Unspecified
Calcium Sulfate	3/14/77	1.5 tons per day
Gypsum Wastes (no Cd or Pb)	10/7/76	Unspecified

<u>Date</u>	<u>Waste Type</u>	<u>Waste Quantity</u>
1/30/76	Lime Slurry	1,500 to 5,000 gallons per week
6/18/75	Neutralized Sludges	Temporary Approval
2/24/75	Dripolene	4 to 5 truckloads per week for 6 months

1/14/81

Fly Ash

80,000 cubic yards for  
calendar year 1981

<u>Date</u>	<u>Waste Type</u>	<u>Waste Quantity</u>
1/9/81	Asbestos	50 cubic yards (one-time-only basis)
12/17/80	Pipe Insulating Asbestos Waste	300 cubic yards (one-time-only basis)
12/9/80	Metal Shavings	25 cubic yards per year
10/30/80	Asbestos Contaminated Material	700 cubic yards (one-time-only basis)
8/25/80	Asbestos	100 cubic yards (one-time-only basis)
5/14/80	Asbestos	40 cubic yards per week for four weeks; 20 cubic yards every other week thereafter
5/13/80	Fly Ash	15,000 cubic yards
11/27/79	Aluminum Dross (Milling Dust and Slag)	300 tons per day until June 15, 1980
3/20/79	Furnace Brick, Pallets	Unspecified
4/28/78	Water and Vegetable Oil	4,000 gallons (one-time-only basis)
11/18/77	Herbicide	120 cubic yards (one-time-only basis)
9/6/77	Oily Waste From 6-Stand Oil Recovery Unit	1,200 gallons per day
7/22/77	Filter Cake Kiln Scrubber Mud	1,500 pounds per week 3,000 pounds per week
6/3/77	API Separator Bottoms	200 cubic yards per year
6/1/77	Lime Sludge	80,000 gallons per month (not more than 4,000 gallons per day)
5/17/77	Asbestos Paper	105 cubic yards per week
5/12/77	Filter Cake Scrubber Mud	1,500 pounds per week 3,000 pounds per week (Temporary Approval)
4/25/77	Activated Biological Sludge	Unspecified
3/14/77	Calcium Sulfate	1.5 tons per day
3/14/77	Lime Waste	80,000 gallons per month
3/4/77	Youngstown Oil Sludge	Unspecified
10/7/76	Gypsum Wastes (ph 7.9)	Quantity Unspecified
10/4/76	Calcium Carbonate	30 cubic yards per day
4/12/76	Paint Sludges	25 cubic yards per day
2/20/76	Corn Starch and Carbon Filters	Unspecified